How to make progress in electricity access in Africa?

Getting minigrids work for the continent

Africa's energy future is not bleak. Energy experts are now shining a new spotlight on the problem. Universal access to electricity can be achieved if the business models for all modes of electrification – including minigrids – are sustainable and scalable. .

Spearheading this approach is the African School of Regulation (ASR), which is an initiative originated by a partnership among the European University Institute via its Florence School of Regulation the University of Cape Town, the Pan African University Institute of Water and Energy Sciences, the Enel Foundation, the Rocky Mountain Institute, the Rockefeller Foundation, the Global Alliance for the People and the Planet (GEAPP), the UN Economic Commission for Africa (UNECA), The Energy Nexus Network (TENN) and also supported by the European Commission.

The aim of the partnership is to share knowledge and foster education initiatives, as well as applied research and to provide space for policy dialogue, for governments, regulators, utilities, and other stakeholders to better regulate the African energy sector in support of the continent's socio-economic development and environmental sustainability.

To this effect, the ASR, in collaboration with the African Development Bank (AfDB), the Africa Minigrid Developers Association (AMDA), the Africa Forum of Utility Regulators (AFUR), the Global Energy Alliance for the People and the Planet (GEAPP), and the International Renewable Energy Agency (IRENA) has organised a three-day on-line conference focusing on sustainable and scalable minigrid business models.

The major aim of the ASR is to be the preeminent pan-African centre of excellence on energy regulation and to provide capacity building on best international regulatory practices.

Professor Ignacio Perez-Arriaga, interim director of the ASR, stressed the importance of capacity building around regulation and business models because, as he put it, "Despite the favourable projections, minigrids have failed resoundingly in Africa and everywhere else over many years to have a significant impact on electricity access."

Commenting during the conference, he explained that minigrids cannot attain the relevance they should unless the sustainability of their business models is resolved and implemented through necessary regulatory measures.

Besides, a large chunk of capital that is needed must come

Professor Ignacio Perez-Arriaga, interim director of the ASR

from private investors, and this will only be possible if business models for minigrids can be defined that are financially viable and can maintain this condition permanently.

"In addition, it is necessary that these business models can be scaled up to the necessary dimension, both in terms of the required financing and the technical and managerial capability of the minigrid developers to install all the minigrids identified in the electrification plan," says Prof Perez-Arriaga.

He emphasized the need for capacity building for governments, energy regulators and minigrid developers themselves in order to build sustainable energy solutions on the continent.

The virtual conference started on January 23, and has attracted 400 registered participants from all continents countries, mostly from Africa, something Prof Perez-Arriaga is delighted about. "At the ASR we plan to take very seriously what will be discussed in this event – and many others than we plan to run using the same format and covering many other topics in energy regulation – so that we can build the body of knowledge to be taught by the ASR in our training courses and to guide our applied research contributions," said Prof Perez-Arriaga.

The need for energy across the globe has never been greater, driven by the ever rising demand, coupled with the effects of climate change and raising costs, which is causing a huge drawback on access for countries that have a poor energy mix. This problem is more pronounced on the African continent, where majority of countries rely heavily on fossil fuels, followed by hydroelectricity, with still very little investment in solar, wind or geothermal. Notwithstanding, Africa as a whole now bears the biggest brunt of climate change effects, especially drought, which directly affects hydro generation.

Only 57 percent of the continent's 1.3 billion inhabitants have access to electricity, with up to 80 percent of rural dwellers having no access.

Despite this huge gap, most African countries are not moving fast enough to achieve universal access to electricity for their citizens by 2030, as stipulated in the Sustainable Development Goal 7.

Although it must be noted that last year, at the 6th EU-AU Summit in Brussels, leaders of the African Union (AU) and European Union (EU) committed to a joint vision for a renewed partnership on renewable energy and sustainable development.

About Euro150 billion was announced as support for the continents' common ambitions for Agenda 2030 and the AU Agenda 2063 which promote sustainable development.

The aim of the agreement signed in Brussels is to support Africa's green transition in the energy sector by increasing renewable energy capacity, increasing access to affordable and reliable energy for all Africans and, promoting sustainable energy uses and supporting market integration and sector reforms.

According to a special report by the International Energy Agency, "today's crippling spikes in energy prices underscore the urgency and the benefits for African countries of accelerating the scale up of cheaper and cleaner sources of energy."

The report, entitled Africa Energy Outlook 2022, states that the overlapping crises are affecting many parts of Africa's energy systems, including reversing positive trends in improving access to modern energy, with 25 million more people in Africa living without electricity today compared with before the COVID pandemic."

And as noted by Wale Shonibare of the Africa Development Bank (AfDB) in his opening remarks during the conference:

"The world continues to grapple with effects of COVID 19 where investment plans changed and supply chains declined, which is affecting the energy sector." He said it is imperative to build economic resilience for Africa, and reserve the decline of foreign investments.

"Off-grid utility models will be imperative to unlock universal electrification faster." But he also noted that many African governments lack policy frameworks for long term reliable solutions. He said the AfDB is determined to reduce regulatory bottle necks to increase access.

Building the many minigrids that make economic sense to meet rural demand for electricity in the continent will be an essencial contribution to achieve universal electricity access. Experts view minigrids as the least expensive solution to supply electricity to clusters of population in many situations, in particular in rural areas.

Minigrids can be used to provide reliable power 24 hours per day not only for residential demand, but also for productive and community uses.

For sub-Saharan Africa it is estimated that more than 200,000 minigrids will be needed to supply approximately 32 percent of the people that will be gaining access until 2030, although across the continent, only about 20,000 have been deployed so far, and the current pace is lower than 1,000 minigrids per year. There is urgent need to build more minigrids to meet demand.

But this can only happen with the right regulation and good business models by African governments to govern investment in this area.

There is need for countries on the continent to adopt regulation frameworks that enable the sustainable deployment of minigrids.

In many instances, countries need to realign their policies and legal frameworks to accommodate investments in renewable energy that meets demand, hence the need for the conference.

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James Manda, who was representing the Africa Forum for Utility Regulators (AFUR), said that governments must play the role of facilitator and not the role of player in the electricity market. He indicated that the private sector should take a greater role in establishing accelerated energy transition. But the onus is on African governments to create an enabling environment for investment in the energy sector. "We must show investors that Africa is a worthy investment in the energy sector," said Mr Manda, but this will be only possible with adequate regulation and business models, which in general is not the case today.

According to Dr Rabia Ferroukhi, who oversees IRENA's renewable energy policy, the challenge is to devise regulatory approaches that can provide scale up for minigrids to create global value. In particular looking at best practises in Minigrid regulation designs. "The critical piece of just and inclusive energy transition is to make sure that we have affordable and reliable energy and that this energy is available to households, firms and business sectors. Decentralised energy solutions have a role to play in this role alongside the centralised solutions," said Dr. Rabia.

Jessica Stephens, CEO of the African Minigrids Developers Association (AMDA), emphasized the need for sound regulation to reduce risk for commercial investors in minigrids. AMDA has over 40 members across 17 African countries.

Over and above, the three-day conference on minigrids has raised hope that the best regulatory and business model approaches will be employed to contribute to a brighter Africa's energy future

As Wale Adeboaye, Director at GEAPP summed it all up: "We are looking forward to these conversations during the conference and looking forward to some actionable goals to move the minigrid regulation forward."

Preparatory documents, presentations and a summary of the Conference will be available soon at the ASR website: africanschoolregulation.org